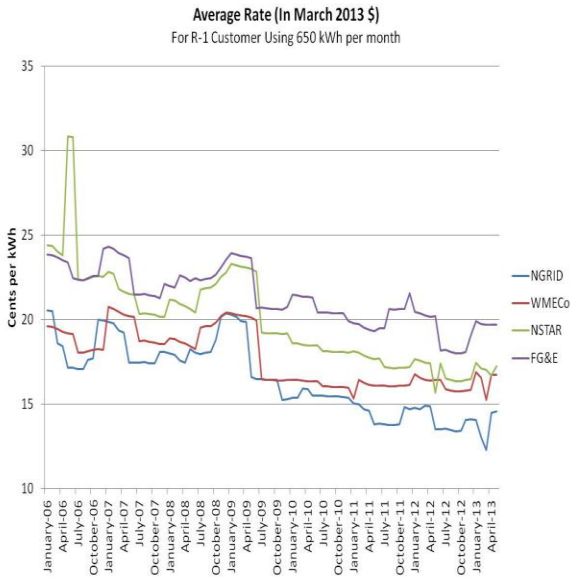
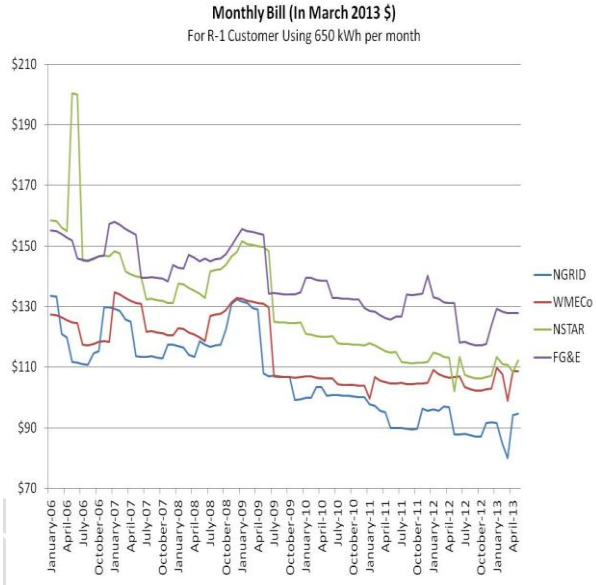
Response to Data Request from Robert Rio - DRAFT
May 8, 2011
Contributions from DOER, DPU and EEA

I. Context: All-in Rates/Bills are at one of the lowest points in the last ~6-10 years

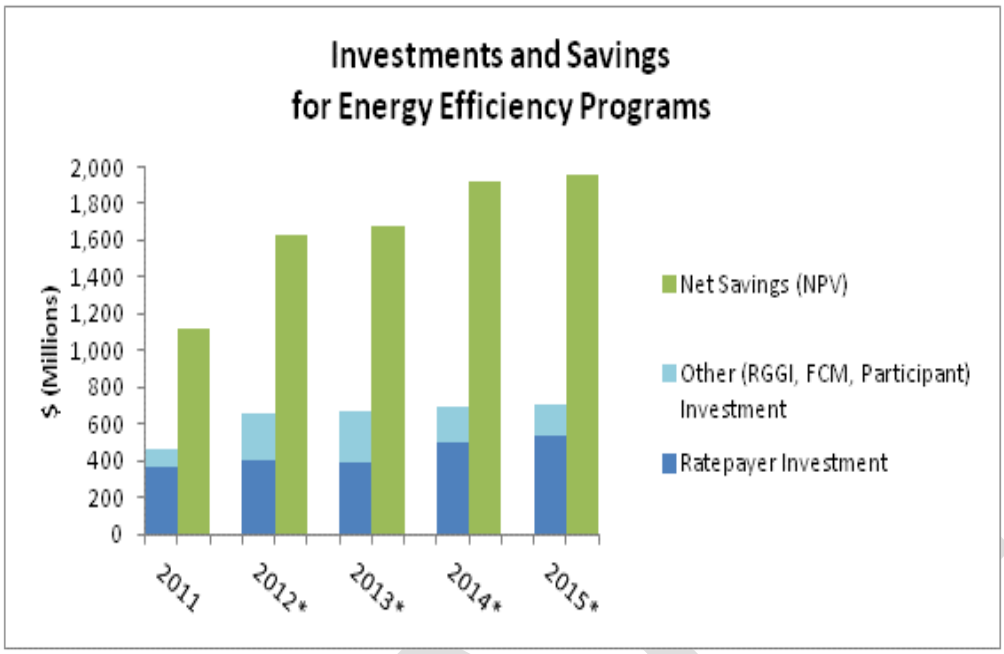




Residential Rates (in March 2013$)	NSTAR	NGRID	WMECo	FGE
Highest Rate (cents)	24.39	20.56	20.74	24.30
Date of highest rate	1/1/2006	1/1/2006	1/1/2007	1/1/2007
Rate today (cents)	17.25	14.56	16.72	19.68
% change	-29.28%	-29.20%	-19.38%	-19.00%

Residential Monthly Bill (in March 2013$)	NSTAR	NGRID	WMECo	FGE
Highest monthly bill	$158.51	$133.64	$134.78	$157.95
Date of highest monthly bill	1/1/2006	1/1/2006	1/1/2007	1/1/2007
Monthly bill today	$112.10	$94.62	$108.67	$127.94
% change	-29.28%	-29.20%	-19.38%	-19.00%

II. Energy Efficiency Investments and Savings by Year and Source of Funds



$ (Millions)	2011	2012*	2013*	2014*	2015*
Ratepayer Investment (Energy Efficiency Reconciliation Factor + System Benefit Charge)	$366.9	$403.1	$393.5	$506.6	$538.4
Other Investment (RGGI + FCM + Participant) Investment	$91.7	$258.9	$280.6	$183.6	$165.1
Total Energy Efficiency Investment	**$375.5**	**$661.9**	**$674.1**	**$690.2**	**$703.5**
Total Benefit (NPV)	$1,494.9	$2,287.2	$2,353.3	$2,608.0	$2,664.5
Net Benefit (NPV)	**$1,027.7**	**$1,366.4**	**$1,398.6**	**$1,734.2**	**$1,795.8**

*Projected

Note: On average, when comparing the 2010-2012 three-year plans to the 2013-2015 three-year plans there is a ~25% increase in investment but a ~50% increase in savings.

III. Investments and Benefits in Clean Energy Programs by Program (annual, in rates, and bill impacts).

A. Investments

	Total annual investment					Incremental investment per kWh (for customer rates aggregated across all utilities and rate classes)					Incremental investment on monthly residential customer bill ($) (Based on residential customer using 650kWh per month)				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Renewable Portfolio Standard (RPS)*	$131,914,890	$250,213,632	(2)	(2)	(2)	$ 0.00275	$ 0.00538	(2)	(2)	(2)	$1.79	$3.50	(2)	(2)	(2)
Renewable Energy Charge	$23,950,842	$23,261,206	$23,310,254	$25,122,000	$25,122,000	$ 0.00050	$ 0.00050	$ 0.00050	$ 0.00050	$ 0.00050	$0.33	$0.33	$0.33	$0.33	$0.33
Long Term Renewable Contracts	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Solar Carve Out	$40,873,322	$24,569,212	(2)	(2)	(2)	$ 0.00085	$ 0.00053	(2)	(2)	(2)	$0.55	$0.34	(2)	(2)	(2)
Utility-owned solar	$912,461	$1,177,950	$3,182,315	(2)	(2)	$ 0.00011	$ 0.00013	$ 0.00012	(2)	(2)	$0.07	$0.08	$0.08	(2)	(2)
Smart Grid Pilot	$0	$295,000	$288,100	$21,800,000(3)	$21,800,000(3)	$ -	$ 0.00003	$ 0.00001	$0.000405(3)	$0.000405(3)	$0.00	$0.02	$0.01	$0.28 (3)	$0.28 (3)
Net Metering	$274,212	$2,139,408	$6,411,675	(4)	(4)	$ 0.00007	$ 0.00008	$ 0.00025	(4)	(4)	$0.04	$0.05	$0.16	(4)	(4)
Energy Efficiency Reconciliation Factor	$247,149,624	$286,781,558	$276,905,288	$388,305,336	$419,601,065	$ 0.00516	$ 0.00616	$ 0.00594	$ 0.00821	$ 0.00883	$3.35	$4.01	$3.86	$5.33	$5.74
System Benefit Charge	$119,754,208	$116,306,030	$116,551,272	$118,288,106	$118,840,753	$ 0.00250	$ 0.00250	$ 0.00250	$ 0.00250	$ 0.00250	$1.63	$1.63	$1.63	$1.63	$1.63

* This does not include Solar Carve Out investments.
(1) No additional charges apply to the RPS due to Long Term Renewable Contracts, in fact, most Long Long Term Contracts (including both commodity and REC prices) procured by the utilities have been below market prices, so these result in savings for ratepayers.
(2) Given uncertainties in projections of Renewable Energy Credit demand and supply, and market conditions, RPS compliance costs are unable to be projected.
(3) 2014 and 2015 numbers are still unertain since NSTAR and NGRID have not sought recovery yet. The numbers included in these cells are estimates based on total projected costs allowed by the DPU.
(4) Given uncertainties in projections of energy demand and supply, development costs and market conditions related to possible net metering projects, net metering costs are unable to be projected.

B. Benefits

Benefits are relatively easy to quantify for energy efficiency as kWh saved and therefore dollars saved can be modeled or tracked. Other benefits are difficult to quantify but still result in benefits for participants, the public in general, or through economic development in the clean energy sector.

1. Net Metering

The net metering statutes (M.G.L. Chapter 164 §§ 138-140) do not require the Department of Public Utilities to calculate the benefits associated with net metering. Nonetheless, the DPU expects that the benefits associated with net metering would be similar to the load-reduction benefits associated with energy efficiency. Net metering has made it possible for municipal and private participants to reduce their own energy costs and better mitigate energy cost price volatility.

2. Utility-owned Solar

The quantified benefits associated with utility-owned solar include energy, solar renewable energy certificates (SRECs), and tax incentives. The DPU notes, however, that additional unquantified benefits exist for utility-owned solar. The additional benefits associated with utility-owned solar would be similar to the load-reduction and price volatility mitigation benefits associated with energy efficiency and net metering.

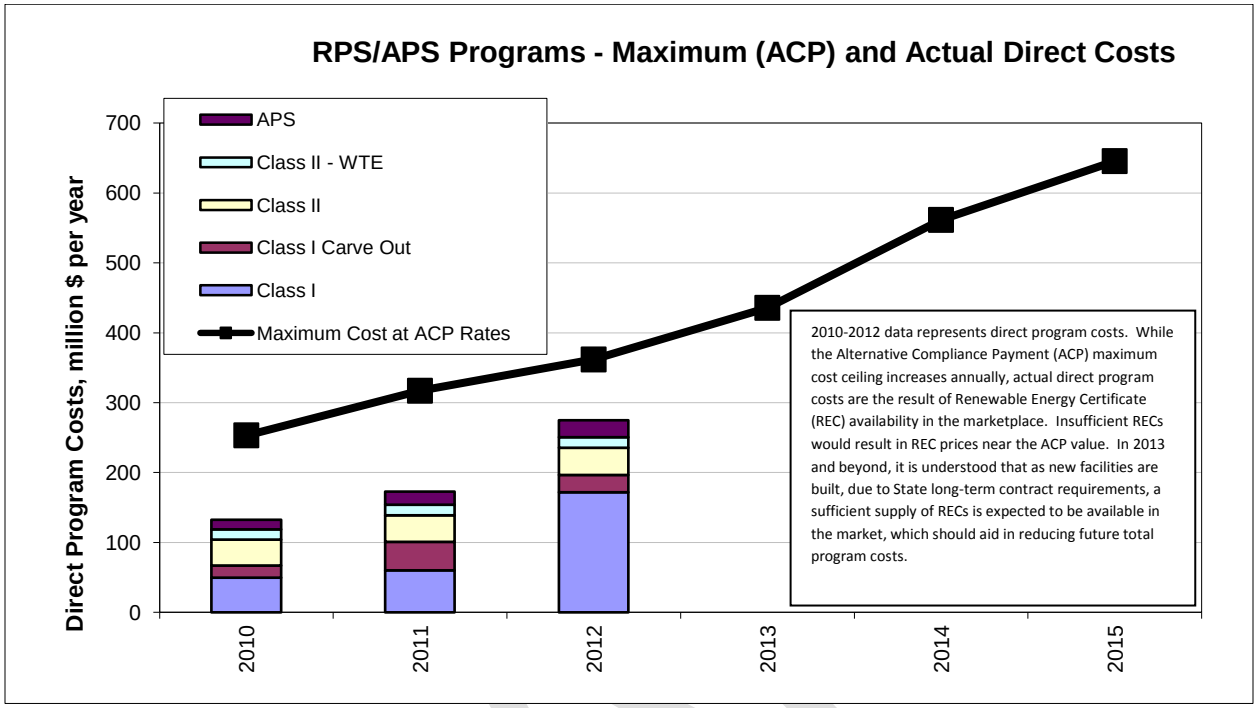
3. Smart Grid Pilot

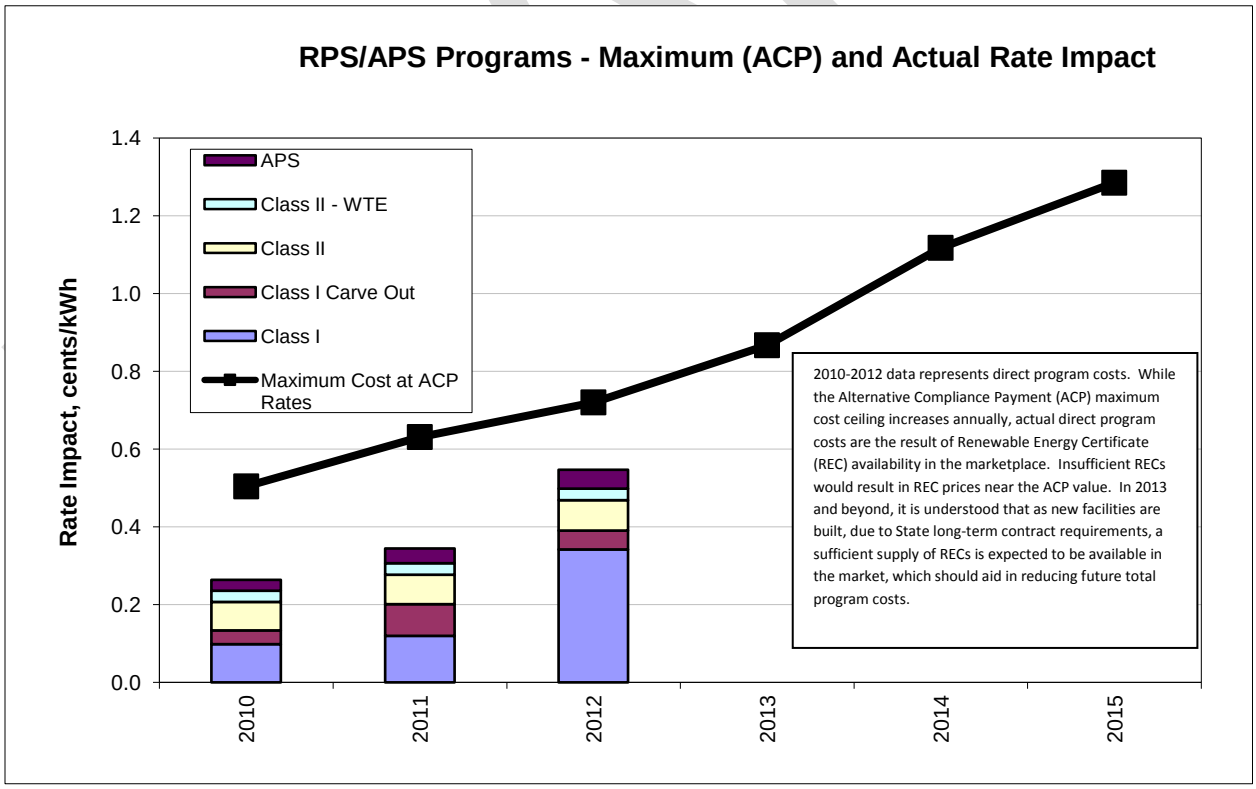
   The smart grid pilot programs will provide valuable information on how the Commonwealth should move forward regarding smart grid technologies and dynamic pricing. This information will include: customer response to time-varying rate structures; potential savings for customers on bills due to reduction in peak and average usage; customer adoption of in-home energy technologies; improvements in electric service reliability due to the adoption of distribution automation on the electric grid. NSTAR Electric's pilot program received matching funds from the American Recovery and Reinvestment Act.

4. Renewable Energy Long Term Contracts

   Long Term Contracts provide developers greater certainty and therefore facilitate financing. Most Long Term Contracts (including both commodity and REC prices) procured by the utilities have been below market prices, so these result in savings for ratepayers. (Saving amounts cannot be revealed because they contain proprietary information.)

IV. RPS Program Costs: Actual costs have consistently been below Alternative Compliance Payment prices.





V. Solar Installation Costs: All-in Solar PV Installation Costs continue to decline and have declined by ~35% in the last two years alone in Massachusetts.